

U.S. Army Center for Health Promotion and Preventive Medicine

A SOLDIER'S GUIDE TO STAYING HEALTHY IN WEST AFRICA

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INTRODUCTION

This country-specific guide should be used in conjunction with [GTA 08-05-062, Guide to Staying Healthy](#), and is intended to provide information that can help reduce your risk of Disease and Non-battle Injuries (DNBI) when deployed. This health threat and countermeasure information is based on the most current data available from U.S. Department of Defense medical agencies at the time of production. In addition to the information in this guide, you should also receive force health protection, health threat, and preventive medicine countermeasures training/briefings prior to and, as required, throughout the length of your deployment.

WEST AFRICA OVERVIEW

West Africa includes the countries of [Benin](#), [Burkina Faso](#), [Cote D'Ivoire](#), [The Gambia](#), [Ghana](#), [Guinea](#), [Guinea-Bissau](#), [Liberia](#), [Mali](#), [Mauritania](#), [Niger](#), [Nigeria](#), [Senegal](#), [Sierra Leone](#), and [Togo](#). The coastal region consists of flat to rolling plains with mangrove swamps and marshes that give way to sand dunes in the north. Two mountainous areas are present along the coast: the Sierra Leone Peninsula, which includes the capital city Freetown; and western Cote d'Ivoire with coastal cliffs, heavy surf, and no natural harbors. The most notable feature in the northern interior is the Sahara Desert, which is composed of a vast desert plateau with central hills. The southern interior is composed of rising foothills and upland plateaus that contain savannahs and tropical rain forests. Two low-mountainous areas exist in the region: the northern mountains extending from northeastern Mali into western and northern Niger; and scattered, southern mountains, just interior to the southern coast, extending from Guinea in the west to Nigeria in the east. The borders of the region include Chad and Cameroon in the east; the Atlantic Ocean in the south and west; and Libya, Algeria, and Western Sahara in the north. The elevation ranges from 3 meters below sea level in Mauritania to almost 8,000 feet above sea level in Nigeria. The climate in the region is primarily tropical with hot and humid summers and mild, dry winters except for the northern region, which has a desert climate with extreme day and night temperature changes. The average daily temperature range is 72° to 86° F although extreme temperatures of 32° to 122° F are possible especially in the Sahara Desert. The wet season is May to October with an average annual rainfall from 35 to 71 inches; however, coastal areas can receive up to 200 inches while desert regions receive less than 10 inches. Severe monsoon downpours and thunderstorms with tornadoes and flash flooding can occur in the tropical regions at the beginning and end of the wet season. Hot, dry, and dust-laden harmattan winds from the Sahara occur during the dry season in the northern and central areas and can raise temperatures to over 100° F. The northern areas are prone to periodic droughts, and severe cyclones can occur in Mauritania during September to April.

WEST AFRICA RISK ASSESSMENT

Based on a combination of all major infectious diseases that occur in a country, an [overall country risk level](#) is assigned as low, intermediate, high, or highest risk. All the countries in this region are HIGHEST RISK for infectious diseases except for Mauritania, which is HIGH RISK. Diseases of military importance to forces deployed to West Africa include [hepatitis A and E](#), [typhoid fever](#), [brucellosis](#), and diarrheal diseases such as [cholera](#), all acquired by consuming contaminated food, water, and dairy products; vector-borne diseases such as [malaria](#), [chikungunya virus](#), [yellow fever](#), [dengue fever](#), [Crimean-Congo hemorrhagic fever](#), [leishmaniasis](#), [trypanosomiasis](#), and [Rift Valley fever](#) which are acquired through the bites of various insects and ticks; [schistosomiasis](#) and [leptospirosis](#) from swimming, wading, or skin contact with contaminated water; [Lassa fever](#) from inhalation of contaminated dust and aerosols; [anthrax](#) and [rabies](#) from animal contact; [meningococcal meningitis](#) and [tuberculosis](#)

from contact with human respiratory secretions or droplets; and [sexually transmitted diseases](#). Environmental factors also pose a significant health risk to deployed forces and include sewage, agricultural, and industrial contamination of water and food supplies; extreme heat; significant night and day temperature changes; severe sandstorms and dust storms; localized air pollution; and potentially severe flooding.

INCREASED REGIONAL DISEASE THREATS

The potential for acquiring infectious diseases in the West Africa region is higher than most locations to which you may deploy and poses a very serious risk to your health. It is critical that you use appropriate countermeasures AT ALL TIMES to avoid incapacitations, hospitalization, and loss to your unit.

Malaria is widespread and occurs year-round throughout this region. Additionally, there is significant risk in this region for acquiring other incapacitating vector-borne diseases, including chikungunya virus, dengue fever, Rift Valley fever, and Crimean-Congo hemorrhagic fever. All are transmitted year-round, day and night, in both urban and rural areas. You are at especially high risk for chikungunya virus in Cote d'Ivoire, Guinea, and Liberia; for dengue fever in Cote d'Ivoire and Senegal; Rift Valley fever in Mauritania; and for Crimean-Congo hemorrhagic fever in Nigeria. Preventing exposure to mosquitoes, ticks, sand flies, or other biting vectors at all times and in all areas will help reduce your risk of acquiring vector-borne diseases.

Lakes, rivers, streams or other surface water may be heavily contaminated with schistosomiasis or leptospirosis. You are at increased risk in Burkina Faso, The Gambia, Ghana, Guinea-Bissau, Mali, Niger, Nigeria, and Senegal and if you are involved in operations that involve water contact.

Liberia is one of the highest risk areas in the world for Lassa fever; an increased risk for Lassa fever exists in Sierra Leone. Lassa fever is caused by inhalation of dust or ingestion of food contaminated with a virus that is found in rodent urine and feces. Risk is highest for personnel with extensive exposures to local dwellings in which there are large numbers of rodents.

Annual outbreaks of meningococcal meningitis occur throughout the region. You are at an especially high risk during the dry season from October through May and if you have close contact with local populations during an outbreak. All military personnel receive the meningococcal meningitis vaccine that provides protection from most types of meningococcal meningitis.

FIELD SANITATION TEAM

Each company-sized unit has a Field Sanitation Team (FST) whose members are trained (40-hour course) and fully equipped IAW [AR 40-5](#), [FM 4-25.12](#), and [FORSCOM REG 700-2](#). Know who the members of your FST are, and know how they can assist in preventing medical threats to your health. Become familiar with FST equipment and training.

TOXIC INDUSTRIAL CHEMICALS AND MATERIALS

When deployed, you may face health risks from industrial chemicals and materials as a result of activities by terrorists or warring parties; accidents related to improper design, maintenance, or operation of indigenous industrial facilities; inadvertent exposure to toxic waste materials in the environment; or improper handling or disposal of hazardous materials with which our own forces deploy. The degree of health risks depends upon many parameters. Consult your medical authority for additional information.

VECTOR-BORNE DISEASES

- Numerous vector-borne diseases are present throughout this region. They include [malaria](#), [chikungunya virus](#), [yellow fever](#), [dengue fever](#), and [Rift Valley fever](#) from mosquitoes; [leishmaniasis](#) from sand flies; [trypanosomiasis](#) from tsetse flies; and [Crimean-Congo hemorrhagic fever](#) from ticks. There are many other diseases spread by the bites of mosquitoes, ticks, fleas, black flies, and lice. Your local medical authority will determine if these diseases or other vector-borne diseases are a threat in your specific location and provide appropriate countermeasures.
- Take your malaria prevention pills when directed to do so. This is CRITICAL. Normally, you will begin taking medication prior to arriving in the area, while in the area, and after returning home.
- Use the [DOD Insect Repellent System](#) System detailed in [GTA 08-05-062](#) to reduce your risk of acquiring a vector-borne disease. Wear permethrin-treated uniforms with trousers tucked into boots, sleeves rolled down, and undershirt tucked into trousers. Wear DEET on exposed skin.
- When deployed to this region, [sleep under a permethrin-treated bed net](#) to repel insects and further reduce risks of vector-borne diseases. Many insects in this region feed during the night, including mosquitoes that transmit malaria.
- When using both DEET and sunscreen products, apply sunscreen to the skin first so it does not interfere with the effectiveness of the DEET. After 30 minutes to an hour, apply the DEET. This allows the sunscreen to penetrate and bind to the skin first.

FOOD-BORNE AND WATER-BORNE DISEASES

The diseases of greatest risk throughout the region, in both rural and urban areas, are bacterial and protozoal diarrhea, hepatitis A, and typhoid fever, associated with contaminated food, water, and ice. Outbreaks of cholera occur annually in Nigeria. Do not consume any food, water, or beverages (to include bottled water) that have not been approved by the U.S. military. Assume all non-approved food, ice, and water is contaminated. Water and food items available in this region, including dairy products, fish, fruits, and vegetables, may contain unsafe levels of pesticides, chemical fertilizers, bacteria, and viruses. Contamination with human or animal waste is widespread. Even a one-time consumption of these foods or water may cause severe illness. See [GTA 08-05-062](#) for appropriate countermeasures.

HOT AND COLD WEATHER INJURIES

Temperature extremes in this region may impact military operations. Heat is the greatest overall medical threat when deployed to this region, especially during the early phase of deployment; acclimatization is critical. Individual and unit countermeasures are extremely important. Cold injuries are possible during the winter in the desert region.

SAND, WIND, AND DUST

Sand, wind, and dust cause health problems, particularly to skin, eyes, throat and lungs. Take care of problems early to avoid infection. Dry air, dust and wind dry out the nose and throat and can also cause nosebleeds, coughing and wheezing. Cracked, chapped fingers reduce manual dexterity. Body areas (such as ears, armpits, groin, elbows, knees, feet, and the area under breasts) that collect dust and sand are susceptible to chafing, abrasion and infection. High winds can turn tent pegs and loose objects into flying missiles (which may not be visible in blowing sand).

- Take a daily sponge bath, using an approved water source.
- Wash your face and eyelids several times per day.
- Carry at least two pairs of glasses and a copy of your prescription. Do not wear contact lenses; [AR 40-63](#) prohibits contact lens use during a military deployment.
- Breathe through a wet face cloth, or coat the nostrils with a small amount of petroleum jelly to minimize drying of mucous membranes. Protect your lips with lip balm.
- Shield your face with cloth materials to protect from blowing dust and sand.
- Wear goggles to protect your eyes from wind, dust and sand or when traveling in open vehicles.
- Wear gloves and use moisturizing skin lotion to protect your hands.

HAZARDOUS ANIMALS AND PLANTS

- Many species of highly poisonous snakes, which are well camouflaged and very aggressive, live in the region. Consider any snake encountered as poisonous, and do not handle. Seek immediate medical attention if bitten; untreated snakebites may cause serious illness or death within 1 hour.
- Several species of scorpions and spiders, some with potentially fatal venom, are present throughout the region. If possible, avoid sleeping on the ground. Shake out boots, bedding, and clothing prior to use, and never walk barefoot. If bitten or stung, seek medical attention immediately.
- Some regional plants have thorns, stinging hairs, or toxic resins that may puncture the skin or introduce poison into the skin causing skin irritation, rashes or infections. Avoid skin contact with plants when tactically feasible.
- Contact with the smoke from the burning of these plants can also cause skin rashes and damage to your lungs.
- Clean your clothing after contact with harmful plants. Decontaminate clothing by washing with soap and water.
- Some regional plants may cause systemic poisoning if leaves, berries, flowers, or other plant parts are chewed or swallowed. Symptoms include dizziness, vomiting, irregular heartbeat, and delirium or hallucinations.

SEXUALLY TRANSMITTED DISEASES

[Sexually transmitted diseases](#) are highly prevalent in this region. Gonorrhea, chlamydia, and other infections are common, and may affect a high percentage of personnel who have sexual contact. Human immunodeficiency virus (HIV) and hepatitis B occur throughout the region. Though the immediate impact of HIV and hepatitis B on an operation is limited, the long-term impact on your individual health is substantial. See [GTA 08-05-062](#) for appropriate countermeasures.

HEARING PROTECTION

It is essential that you use properly fitted hearing protection during military operations. Exposure to high-intensity noise may cause hearing loss that can adversely affect your combat effectiveness and individual readiness. Good hearing is essential to mission success. If you are a dismounted soldier, the [Combat Arms Earplug](#) (NSN 6515-01-466-2710) will protect you from the impact noise of weapons fire while only slightly interfering with voice communications and detection of combat sounds such as vehicle noise, footfalls in leaves, and the closing of a rifle bolt. While not as effective as the Combat Arms Earplug in preserving your ability to hear important mission-related sounds, noise muffs or standard earplugs are very effective in preventing noise-induced injury. If you are a member of vehicle or helicopter crews, your combat vehicle crew or aircrew helmets have built-in hearing protectors.

ORAL HEALTH

Dental disease is a common problem during deployments due to the challenge of maintaining good oral hygiene. You should deploy with toothbrush, dental floss, and fluoride toothpaste. Daily flossing and twice daily brushing of teeth is the best way to ensure prevention of periodontal disease and to decrease your risk of problems such as trench mouth and tooth decay. In difficult tactical environments, teeth should be brushed at least once a day. Seek medical attention immediately at the onset of any dental problems.

SKIN DISEASES

Skin irritations and infections, such as athlete's foot and ringworm, are common medical threats during any deployment and are commonly caused by fungi. The best prevention is to maintain clean, dry skin. See [GTA 08-05-062](#) for additional countermeasure information.

PRE-DEPLOYMENT HEALTH INFORMATION

- [Complete the Pre-Deployment Health Assessment \(DD FORM 2795\)](#) to assess your state of health before deployment and to assist health care providers in identifying your medical needs and providing present and future medical care to you.
- You will not have access to your health care record during the deployment. The Adult Preventive and Chronic Care Flowsheet ([DD FORM 2766](#)) will be used as your deployment health record. This document will include information on all your immunizations, any medications you are currently taking, and any ongoing medical problems that you may have. When you go through readiness processing, ensure that all appropriate information is documented on your DD FORM 2766. When you return home, this information will be placed in your regular health record.

INFORMATION ABOUT YOUR HEALTH CARE WHILE DEPLOYED

- It is important that you know where to seek health care while deployed. This may or may not be through the same channels as your home station. Ask your chain of command for more information.
- While deployed, you must maintain your health and seek care whenever an illness or injury threatens your ability to complete your tasks. Your unit is depending on you. It is always better to seek care early so that your problems can be documented appropriately and taken care of immediately.

POST-DEPLOYMENT HEALTH INFORMATION

- [Complete the Post-Deployment Health Assessment \(DD FORM 2796\)](#) to assess your state of health after deployment and to assist health care providers in identifying your medical needs and providing present and future medical care to you.
- If you become sick after you return home, tell your physician that you were deployed.
- Complete malaria medications as directed, and receive follow-on medical care/tests as directed.

Contact your Preventive Medicine or Medical Support Unit for more information.



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